Security Target

ST introduction
The reference of this ST is Secure Element N5B2M0027C560000 SN200 with MIFARE DESFire EV2 1.0.17.0Q Security Target version 0.4, dated April 20, 2020.

TOE
The TOE is an open platform implementing the MIFARE specification [MIFARE-DES-EV2] and the access control in the MIFARE services.
See PP(s) for details.

TOE reference
The TOE is referred to as Secure Element N5B2M0027C560000 SN200 with MIFARE DESFire EV2 1.0.17.0Q and is named and uniquely identified using the GetVersion command as follows:

<table>
<thead>
<tr>
<th>Field</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>VendorID</td>
<td>0x04</td>
</tr>
<tr>
<td>HWMajorVersion</td>
<td>0x62</td>
</tr>
<tr>
<td>HWMinorVersion</td>
<td>0x01</td>
</tr>
<tr>
<td>SWMajorVersion</td>
<td>0x02</td>
</tr>
<tr>
<td>SWMinorVersion</td>
<td>0x00</td>
</tr>
<tr>
<td>CWCY</td>
<td>0x4319</td>
</tr>
</tbody>
</table>

In addition, the hardware ID and device type are retrieved using the GET DATA command with 0xDF4C tag. The 0x8C tag is returning the hardware ID, while the 0x87 tag is returning the device type, as specified in [JCOP-UGM]:

<table>
<thead>
<tr>
<th>Field</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>HWID</td>
<td>0x23</td>
</tr>
<tr>
<td>DeviceType</td>
<td>0xC8</td>
</tr>
</tbody>
</table>

The DESFire EV2 applet consists of 4 components, as follows:
- DESFire mfcarrier-DFEV2-1.0.17.0Q-20191021 (SVN revision 50652)
- SIO Library interfacesio-1.0.10.0Q-20190116 (SVN revision 41581)
- MCM mcm-1.0.13.0Q-20191119 (SVN revision 51573)
- lib-DFEV2-1.0.17.0Q-20191021 (SVN revision 50652)

TOE overview
The TOE consists of the following:

<table>
<thead>
<tr>
<th>TOE component</th>
<th>Identification</th>
<th>Form of delivery</th>
<th>Certification identifier</th>
<th>Date of certificate issue</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hardware IC</td>
<td>SN200 B1.1 C04</td>
<td>(diced) wafer/module/card</td>
<td>ICCN0264</td>
<td>2019-05-14</td>
</tr>
<tr>
<td>Crypto libraries</td>
<td>1.0.0</td>
<td>Embedded in the above</td>
<td>Included in ICCN</td>
<td></td>
</tr>
</tbody>
</table>
Only (pre-)personalisation guidance is provided [MIFARE-DES-EV2]. No operational guidance other than the MIFARE specifications is provided.
Any (pre-)personalisation performed by the developer of the TOE on behalf of its customers will lead to a state identical to states possible by executing the MIFARE commands for personalisation.

Conformance claims
This ST claims strict compliance to [MIFARE DESFIRE PP] (called “PP(s)” in the remainder of this document) under Common Criteria version 3.1, revision 5.
Exactly the SFRs of the PP(s) are included by reference, no omissions nor additions have been made. The ST is therefore CC Part 2 conformant.
The assurance package is EAL4 augmented with AVA_VAN.5 and ALC_DVS.2. The ST is therefore CC Part 3 conformant.
The rationale behind this claim is the requirement that the MIFARE security evaluation scheme requires compliance to this PP(s) for this TOE type (MIFARE products).

Security Problem Definition
See PP(s).

Objectives
See PP(s).

Extended components definition
There are no extended components, see PP(s).

Security Requirements
Security Functional Requirements
See PP(s). Note that the PP has no open operations.

Security Assurance Requirements
See section “Conformance claims”.

Rationale
See PP(s).

TOE Summary Specification
The TOE implements the SFRs by access control to the MIFARE services in accordance to the MIFARE specification, sufficiently hardened to counter attackers at AVA_VAN.5 level.
References

[MIFARE DESFIRE PP] MIFARE DESFire Protection Profile v1.0
[MIFARE-DES-EV2] MIFARE DESFire EV2 Reference Architecture, ra321914